

### **REMARKS**

This is the second office action and is non-final. Claims 1-33 are pending with this paper. Claims 1-34 are rejected by the Office Action. The Applicant is canceling claim 34.

### **Allowable Subject Matter**

As stated in the Office Action, claim 1 would be allowable if rewritten or amended to overcome the rejection(s) under U.S.C. 112, second paragraph. As discussed below, the Applicant has amended claim 1 in order to overcome the rejections under U.S.C. 112, second paragraph. Furthermore, as stated in the Office Action, claims 2-11 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, second paragraph. Claims 2-11 ultimately depend from claim 1 and are thus allowable. The Applicant requests allowance of claims 1-11.

The Office Action states that 34 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claim. Claim 34 depends from claim 12. The Applicant has amended claim 12 to include all of the features of claim 34 and has cancelled claim 34. Furthermore, claims 13-15 ultimately depend from claim 12. Thus, claims 12-15 are allowable.

### **35 U.S.C. §112**

Claims 1-11 are rejected by the Office Action under 35 U.S.C. 112. Regarding claim 1, the Office Action alleges that there is insufficient antecedent basis for “the received signal” in line 5. The Applicant has amended claim 1 to change “the received signal” to “a received signal” in line 5 and to change “a received signal” to “the received signal” in lines 13 and 14. As amended, claim 1 has established a proper antecedent basis for “a received signal.” Claims 2-11 depend from claim 1. The Applicant requests reconsideration of claims 1-11.

**35 U.S.C. §103**

Claims 12-15 and 23-33 are rejected by the Office Action under 35 U.S.C. 103(a) as allegedly being unpatentable over US 5,726,978 (Frodigh) in view of US 6,654,432 (Barton).

Regarding claim 12, the Applicant has amended the claim to include all of the features of claim 34. The Office Action states that claim 34 includes allowable subject matter. Also, claims 13-15 ultimately depend from claim 12. Thus, the Applicant requests reconsideration of claims 12-15.

Regarding claim 23, the Office Action admits that “Frodigh does not teach removes guard band interval.” The Office Action further alleges that “Barton et al removes a guard band interval (see col. 5, lines 23). The Applicant respectfully disagrees. Barton does teach (Column 5, lines 20- 23. Emphasis added):

As a result of the guard interval, the maximum achievable data rate is reduced by a factor of  $V/(N+V)$ . As an example of this effect, suppose that  $N=4$ ,  $M=16$ ,  $T_E=312$   $\mu$ s, and  $T_G=88$   $\mu$ s, so that  $T_E+T_G=400$   $\mu$ s. Then  $R_b=40$  kbps instead of the rate of about 51.3 kbps **assuming** no guard interval.

Barton does not even suggest removing a guard band interval. Rather, Barton is merely assuming no guard interval to analyze the effect of a guard interval. Thus, the combination of Barton and Frodigh does not suggest “a signal processing unit coupled to the receiver that receives the plurality of orthogonal subcarriers from the receiver, determines a signal quality metric for each subcarrier of the plurality of orthogonal subcarriers, determines subcarrier suppression information based on the determined signal quality metrics, and removes a guard band interval.” Claims 24-25 depend from claim 23. The Applicant requests reconsideration of claims 23-25.

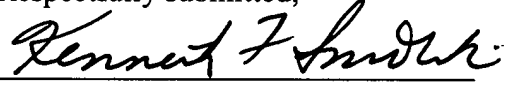
Regarding independent claims 26 and 28, the Office Action has not provided any further arguments than what is discussed for claim 23. Thus, the Office Action fails to establish a *prima facie* case of obviousness for claims 26 and 28. For example, the Office Action does not provide any teachings that suggest “a transmitter coupled to the signal processing unit that transmits the modulated non-suppressed orthogonal subcarrier and that inserts a guard band interval to

ameliorate intersymbol interference”, as claimed in claim 26, and “a signal processing unit coupled to the receiver that determines a transfer function corresponding to the communication channel, determines an equalization function that is based on a determined communication channel transfer function and that reduces the multipath delay when the multipath delay exceeds a predetermined multipath delay, and processes the signal based on the determined equalization function”, as claimed in claim 28. Claims 27 and 29-33 ultimately depend from claims 26 and 28 and are patentable for at least the above reasons. The Applicant requests reconsideration of claims 26-33.

### **CONCLUSIONS**

Favorable reconsideration of this application is respectfully requested. The Examiner is invited to contact the undersigned should it be deemed necessary to facilitate prosecution of the application.

Date: April 6, 2005

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